

#### ABSTRACT OF THE DISCLOSURE

There is provided an ion trap mass spectrometer which can detect fragment ions having a low mass and enables high-sensitivity measurement.

5        A mass spectrometer has an ion source generating sample ions; an ion trap having a pair of and endcap electrodes 7a, 7b and a ring electrode 9 and accumulating and ejecting the ions; gas introduction means 44 arranged in the endcap electrode or the ring  
10       electrode for introducing a gas into the ion trap at a predetermined timing; and a detector detecting the ions ejected from the ion trap, wherein the center axis of a gas introduction hole is arranged so as to pass through region 0 near the center of gravity of the ion trap.